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ABSTRACT

Joint teacher and student development of a contingency management plan to help control disruptive behavior was explored with a class of 13 mildly mentally retarded elementary school children after several less extensive teacher directed contingencies were unsuccessful. All students in the self contained classroom had extensive school histories of various types of disruptive behavior, ranging from loud crying to theft and frequent fights. Five behaviors were identified as disruptive: out of seat behavior, off academic task behavior, throwing objects, name calling, and fighting. Attending behaviors, which were rewarded, were also distinguished: ontask behavior, finishing assignment, correcting assignment, ontime behavior, helping behavior, and listening. Group behavioral standards were applied to individual students, and tokens were dispensed and response costs were collected from the individual students. Through group discussions, students defined the target behaviors, wrote class rules, and planned the token system, with the assistance of the teacher. Baseline observation began 6 days before the intervention was started, and a return to baseline was made after 21 days of intervention. The overall mean number of disruptive incidents fell 60 percent from the first baseline as a result of the intervention, but rose 14 percent upon return to baseline. It is suggested that the role of the intervention should be further clarified by a research design including a longer return to baseline, and possibly a pretest-posttest control group. (SEW)

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The Effects of Cooperative Change Planning in a Reward and Response Cost Token System on the Disruptive Behavior of an Elementary EMH Class

A Paper Presented at the 60th Annual International Conference of the Council for Exceptional Children, April, 1982, Houston, Texas

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ABSTRACT

This research study examined the effects of an elementary self-contained educable mentally handicapped (EMH) classroom's group discussions in which the students defined target behaviors, wrote class rules, and planned a reward and response cost token system undertaken with the assistance of the classroom teacher. The results clearly demonstrated a significant deceleration of certain disruptive target behaviors through cooperative teacher-pupil behavior change planning, implementation, monitoring, and administration.

The Effects of Cooperative Change Planning in a Reward and Response Cost Token System on the Disruptive Behavior of an Elementary EMH Class

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In recent years, there has been a significant trend toward the use of token economies as a viable behavior modification technique. The introduction of a token reinforcement program achieved significant improvements in social target behaviors in an elementary school setting (Ringer, 1973). In a study conducted by Drabman, Spitalnik, and Spitalnik (1974), the possible differential effects of various types of token economies on behavior change targets were investigated. Children in a first grade classroom were divided into four groups and four types of token economies were simultaneously used to control disruptive behavior. All four types of token economy systems proved successful. Token economies have been used as an incentive to strengthen academic performance (e.g., Allyon & Roberts, 1974; Brett & Feldman, 1982), to reinforce attending behavior (e.g., Blaker & Feldman, 1982; Buckholdt, Handelin, and Smith, 1972), and to eliminate disruptive behavior (e.g., Barrish, Saunders, & Wold, 1969; Dutz & Reps, 1974; Thomas, Buhler, & Armstrong, 1968).

The majority of these token economy studies emphasized a reward token reinforcement procedure in which the subjects were awarded tokens when they met some previously established criteria relative to the performance of the specified behavior. While some researchers have reported the successful use of response cost (i.e., take away reward) systems in reducing disruptive or undesirable behavior (e.g., Broden, Hall, Dunlap & Clark, 1970), Azrin, Holz, and Trumbull (1966) focused on the plausible consequences this punishment contingency technique might have on the subject such as the possible negative side effect of increased aggression. Iwata and Baily (1974) found that both reward and response cost token systems could be highly effective procedures in maintaining acceptable levels of social and academic classroom behavior. In contrast to the side effects concerns expressed by Azrin and his associates (1966), Iwata and Baily noted there were no differential effects in terms of student behavior resulting from either contingency.

Although Iwata and Baily (1974) offered students the choice of reward and/or response cost and found no clear preference, research studies involving the utilization of token economies have generally followed a predetermined, teacher-directed set of target behaviors accompanied by preplanned token reward levels and administration procedures. However, a token intervention management program could be planned and accomplished through student-teacher cooperation. Under these conditions, initial and continuing responsibility for behavior change is shared by both parties beyond mere contractual agreements (e.g., Homme, 1970).

Therefore, the major purpose of this study was to use combined teacher-student involvement to develop a contingency management plan which would aid in controlling disruptive behavior and in increasing task attending behavior. This plan was attempted with a class of 13 mildly mentally retarded elementary school children after several less extensive teacher-directed contingencies had been found unsuccessful in modifying the target behaviors.

METHOD

Subjects and Setting

Thirteen educably mentally handicapped children, with a chronological age range of 7-12 years, participated in this experiment. The subjects were in a self-contained elementary school classroom located in a large urban area in the southwest. All subjects had extensive school histories of various types of disruptive behavior ranging from loud crying to theft and frequent fights.

The subjects had previously been receiving reinforcers for acceptable behavior in the form of verbal praise, certificates, a "student of the week" award, photographs, stars, stickers, happy faces, and social visits to the counselor's office. When these reinforcers were observed to be impotent in modifying either task attending behavior or disruptive behavior, punitive

action as well as response cost measures were enacted. Time-out, ignoring, visits to the principal, push-ups and loss of privileges were employed. Subsequent conferences with the principal, the classroom teacher, counselor, and psychologist yielded significant historical data; disruptive behavior and the lack of task attending behavior had been class problems the previous year. Permissive acceptance (i.e., unsystematic tolerance) or corporal punishment were equally ineffective. Both parents and professional personnel wanted a successful behavioral change program and gave their full permission and cooperation for this project.

Behavioral Measures

Five behaviors were identified as disruptive. The first, out of seat behavior, was defined as any irregular sitting position such as sitting on the desk top or back, sitting on the knees as well as standing or walking in the room without the teacher's permission. The second, off academic task behavior, was defined as disturbing another person such as poking with a pencil, putting feet on clothes, shooting a rubber band, pulling or marking another's paper, sticking out one's tongue, making faces, or making obscene gestures. The third, throwing behavior, was defined as throwing paper airplanes, crayons, spit balls, or other objects at anyone or anything in the room. The fourth, name calling behavior, was defined as calling someone by any label except his/her own name. It also included profanity, references to ancestry including remarks about one's mother, and insulting statements such as, "You've got bee bee's in your hair." The fifth, fighting behavior, was defined as tripping, hitting, wrestling or otherwise touching another person and causing pain.

Attending behaviors, which were rewarded, were also defined. The first attending behavior, on task behavior, was defined as setting or standing in the

assigned place and working quietly. The second, finishing assignment, was defined as completing a teacher-assigned academic task. The third, correcting assignment, referred to either correcting mistakes or handing in an assignment that was already correct. The fourth, on time behavior, was defined as being in class in a seated position or in line, whichever was appropriate, within a set time. The fifth, helping behavior, was defined as cleaning the room, doing an errand, helping as a student tutor, etc. The sixth, listening behavior, was defined as being physically oriented to the speaker, answering correctly when called upon, and directing questions to the speaker.

The presence of each of the five disruptive behaviors was recorded on the daily observation log by a mark. Thus, the recording system simply showed whether or not a behavior occurred. The teacher served as the principal observer in the classroom. An independent observer was used to provide interrater reliability.

Procedure

Baseline observation began six days before the intervention was started. The third day before intervention, a classroom discussion was held. The teacher lead the discussion and asked the class for suggestions to help them control their behavior. When the class had no suggestions other than corporal punishment, the token economy was suggested by the teacher. The children discussed different types of behavior and suggested specific target behaviors along with their definitions. The class voted to receive rewards (i.e., tokens) for attending behaviors and to receive fines for disruptive behaviors. The class decided that tokens would be given for the attending behaviors. A reinforcement survey was taken of the students' preferences. The students voted on the amount of fines for each disruptive behavior. Two divisions of disruptive behavior were made: harmful and not harmful. The students decided that harmful behavior

(i.e., behavior which could hurt someone or someone's property) should result in being removed from the class, a writing assignment and/or descriptive teacher notes to parents. Other types of disruptive behavior were to be paid for in the form of a fine established at the rate of one token for one "ticket". The remaining two days before intervention, the new class rules were reviewed and discussed on a daily basis.

On the first day of the token system, the students were shown the tokens (i.e., play dollars) and subsequent rewards as well as the notice forms (i.e., tickets) used for disruptive behavior. The rules were reviewed and the reinforcement menu was placed in the room for visual inspection. The schedules for exchanging tokens and paying fines were explained. Students were given 20 minutes at the end of each day in which to buy preferred activities and to pay any uncollected fines. They also had an opportunity to purchase a 15 minute morning break as well as a 15 minute afternoon break plus additional opportunities to make drinking fountain purchases during the day. It took three dollars to buy a break while it took one dollar to purchase a drink of water at the fountain. Response cost tickets would need to be cleared before each break or could be worked off by completing a teacher-selected writing assignment. The students further suggested that if a student could not pay the fines or received five tickets in a single day, a written notice to that effect would be taken home for the parents to sign.

Initially, token payments were made at least every ten minutes to encourage students to demonstrate appropriate behavior. Later, tokens were dispensed at the conclusion of every 15 minute segment.

After three days of the first intervention phase, the second intervention phase commenced with a cooperative reappraisal of the recording system. While dollars were still acceptable to both parties, tickets were found to be time

consuming by the teacher and too cumbersome by the students. It was eventually decided that use of tickets would be discontinued and that the teacher would simply make a special stamped mark indicating a fine was assessed on a large wall chart and inform the student the nature of the inappropriate behavior and what it would cost. These marks could be checked by the students at any time. A different colored pen was used after each break to show clearly what fines (i.e., dollars minus response cost) had been paid and how many dollars had been individually accrued. The students continued to receive tokens for attending behaviors throughout the day.

Token exchanges were held, on the average, twice a day. Times "A" and "B" were during the afternoon recess period. During time "A", students could buy a 15 minute break. During time "B", students could buy a break and/or special inside activities such as "hockey", "records", or "tape time". Students could accumulate tokens from day to day and on Friday, time "C", "Candy Shop", was held. During this time, students could purchase candy and balloons along with activities. Water purchases were allowed at any time except during a class group activity. Before purchases were made, fines for disruptive behavior had to be paid.

During both intervention phases, token distributions were paired with verbal praise. The previous awards and certificates were also continued, along with stars and stickers, for completed and corrected work.

On day 24, throwing behavior, upon teacher request was mutually redefined to include possession of a paper airplane or paper ball.

A return to baseline was made after a total intervention condition of 21 days. The procedures during this time were the same as the first baseline phase. Verbal praise, awards and certificates, stickers and stars continued to be given. Students whose behavior became too disruptive were given time-out

or kept in during recess or lunch.

RESULTS

The data for disruptive classroom behavior are graphically presented in a frequency distribution chart in Figure 1. The number of times disruptive behavior occurred during the day was totaled for all the children and displayed as a group figure.

Place Figure 1 about here

Figure 1 reveals that a sudden drop in the number of times a behavior occurred took place on day seven with the beginning of the intervention. On day nine, an increase was seen in out of seat behavior, off academic task behavior, throwing behavior, and name calling behavior. This rise coincided with the elimination of tickets being handed out to the class and peaked on day ten for out of seat behavior and throwing behavior. However, none of the behaviors rose to the previous high behavior levels noted during the first baseline period. Because of the periodic erratic daily behaviors recorded during both baseline and intervention conditions, the mean was computed for each behavior during those conditions. The results are shown in Table 1.

Place Table 1 about here

As noted in Table 1, out of seat behavior decreased 77% from an average baseline rate of 57 to 13 during intervention, and continued to decline to 10 upon return to baseline conditions. Off academic task behavior decreased 17% from an average baseline rate of 35 to 29 during intervention, and rose to 42 in the second baseline period. Throwing was reduced 74% from the average baseline rate of 19 to 5 during intervention, and declined to two upon return to baseline. Name

calling decelerated 73% from an average rate of 15 during baseline to four during intervention and down to two during the second baseline. Fighting declined 75% from a baseline average of four to less than one during intervention while returning to one during the second baseline.

DISCUSSION

The major purpose of this study was to develop a contingency management program, through the combined efforts of teacher and students, which would assist in managing the disruptive behavior and in increasing the attending behavior of a class of 12 mentally retarded elementary school children. The management program plan consisted of group behavioral standards being applied to individual students with tokens being dispensed and response costs being collected from the individual students.

As anticipated, the present results provide some evidence that a token reward-cost response contingency plan can be utilized with mildly mentally retarded elementary level students. However, the drop in disruptive behavior shown in out of seat, throwing, and name calling during the return to baseline point to possible confounds to the validity of intervention effectiveness during this experiment. However, intervention was lengthened to 21 school days to gain sufficient data stability prior to a return to baseline conditions. It should also be noted that the short length of return to baseline made that data somewhat abbreviated. A longer return might have produced decidedly different trends. This hypothesis can be somewhat supported by the off academic tasks and throwing behavior data on day 30, Baseline 2, noted in Figure 1.

Since the overall mean number of disruptive incidents fell 60% from the first baseline through intervention then rose 14% upon return to baseline, this

finding appears to lend support to previous studies of reward-response cost economies (e.g., Broden, et al., 1970; Iwata & Bailey, 1974). Another plausible alternative explanation for the continued deceleration of certain disruptive incidents during the return to baseline was suggested by McLaughline and Malaby (1972). In their study on reducing and measuring inappropriate verbalizations in a token system classroom, they suggested that if adult attention functions as a reinforcing agent for some children, then the removal of points (or in the case of the present study, the paying of fines) may have served as a partial reinforcer. As such, it might have been a significant factor in maintaining the occurrence of certain inappropriate behavior (e.g., throwing, out of seat, etc.) in the class with some children.

While not specifically controlled for as an independent variable, it should be noted that the student involvement in planning and implementing the contingencies must be considered potentially responsible, in part, for the drop in disruptive behavior and the lack of classwide negative reaction to the somewhat stringent cost token contingency.

Although the results of this experiment seem to show a definite improvement in the lowering of disruptive behavior when the first baseline and intervention data are compared, the return to baseline condition data leaves the influence of the independent variable in an equivocal position. It appears likely that a relationship does exist between the application of the intervention and the subsequent changes in student behavior; however, the role of the intervention must be further clarified through additional research which should include a longer return to baseline, and possible cross class comparisons utilizing a pretest-posttest control group design (Campbell & Stanley, 1963).

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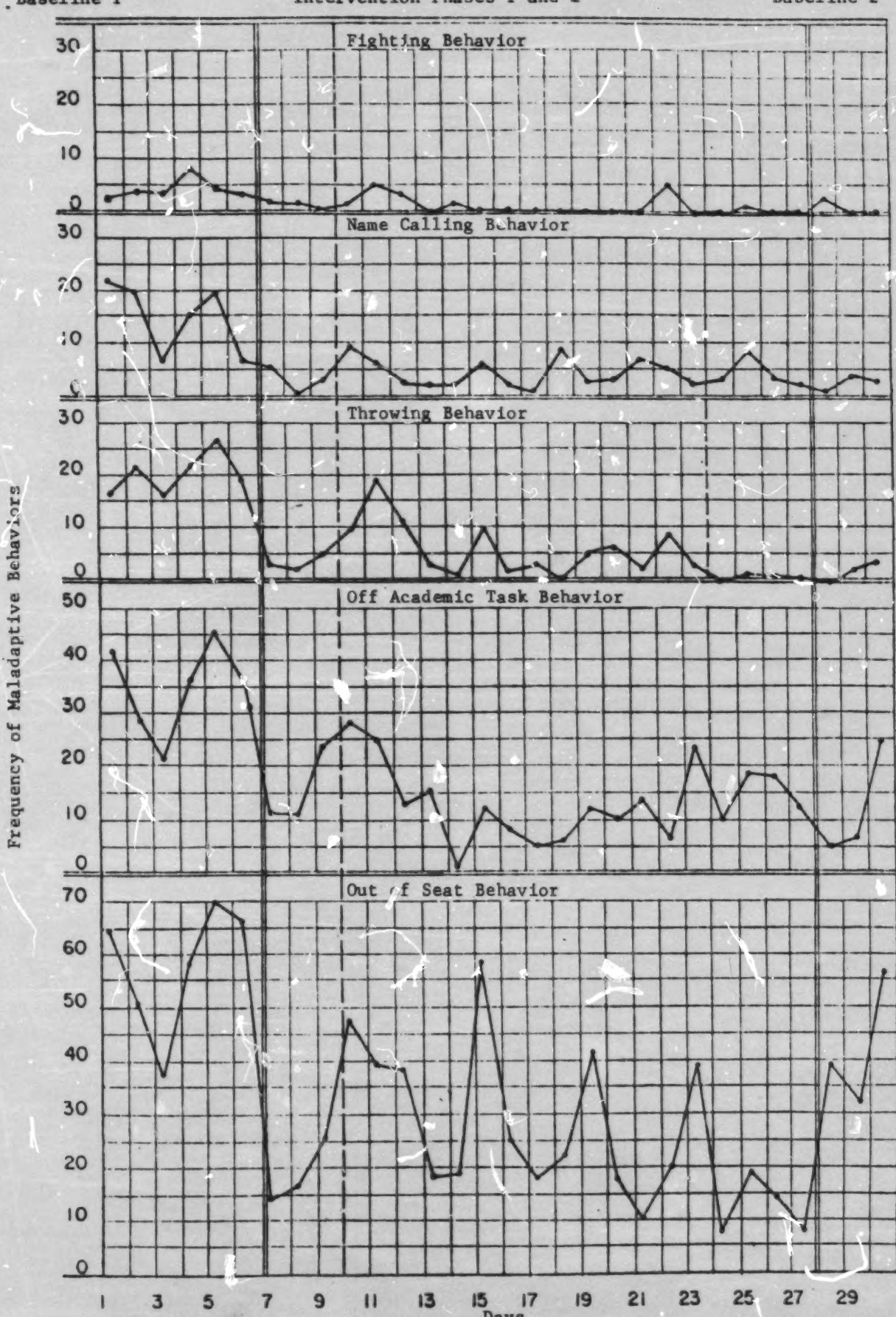

Figure 1. Frequency of disruptive classroom behaviors over observation days.

Table 1

Target Behaviors, Mean Baseline Data
and Intervention Results

Behaviors	Baseline 1	Intervention 1 and 2	Baseline 2
Out of Seat	57	13	10
Off Academic Task	35	29	42
Throwing	19	5	2
Name Calling	15	4	2
Fighting	4	1	1
Total	130	50	57